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AUTHOR Healy, Mary K.; Root, Phyllis
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ABSTRACT

This document contains a selection of materials focusing on man acting to know, preserve, and improve his environment. The booklet is divided into three parts. Part one presents a listing of objectives. They reflect a need for all to become aware of the problems that plague our environment. Furthermore, they indicate that the ecological improvement of the earth is the responsibility of each and every member of society. The second section is a description of eleven class projects which are to be adapted and used in the appropriate grade level, kindergarten through twelve. Relevant topics include environmental laws that could be submitted to the state legislature, a conservation fair, an advertising campaign for endangered species, a map of your locality with its environmental problems and proposed solutions, and "ecopornography." Part three, the most extensive, is a directory of resources. Provided are a brief description, cost information, and grade level for films, filmstrips, printed materials, literature, units, texts, periodicals, songs, and games. (BP)

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Before this century is done, there will be an evolution in our values and the values of human society, not because man has become more civilized but because, on a blighted earth, he will have no choice. This evolution—actually a revolution whose violence will depend on the violence with which it is met—must aim at an order of things that treats man and his habitat with respect.

—Peter Matthiessen, *Everglades*

WHAT'S INSIDE ???

OBJECTIVES

Values ● Understandings ● Realizations

ACTIVITIES

A description of many class projects

RESOURCES

Films

Filmstrips

PRINTED MATERIALS

- $18 Environmental Bookshelf
- Literature
- A Variety
- Periodicals
- Units and Texts

MUSIC

GAMES

ORGANIZATIONS

A BEGINNING is a selection of materials we've seen or used — materials which have validity in any program which focuses on man, acting to know, preserve and improve his ENVIRONMENT.

A BEGINNING is NOT a definitive survey of available conservation education materials.

SELECTED AND ANNOTATED BY

Mary K. Healy, Humanities Teacher
Del Mar School, Tiburon

Phyllis Root, Coordinator, Multi-Media Center
Reedland Woods School, Tiburon

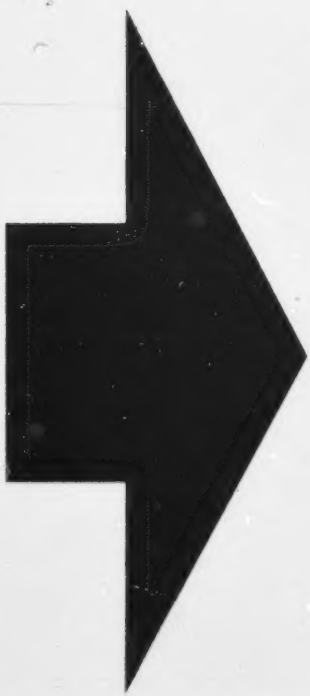
GRAPHICS BY

Joan Peterson, Art Coordinator
Reed Union School District, Tiburon

values

understandings

realizations



The whole learning community—students, teachers, parents and administrators—can, through working, studying and sharing . . .

- Develop a "growing" realization that mankind cannot continue in his old, traditional ways of dealing with his world. These attitudes in the past have led, in part, to the present environmental crisis.

- Become aware of the kinds of things which have happened to our environment, such as the destruction of natural resources, the pollution of the atmosphere, the demise of natural places that give "birth" to ecological sub-groups (estuaries, woodlands, waterways, etc.), the overcrowding of our urban areas, and the sure, gradual loss of scenic beauty.

- Begin to understand that conservation is the responsibility of everybody—a responsibility to be shared and practiced day in and day out throughout life; that this is a world-wide necessity which transcends political boundaries and man-made laws.

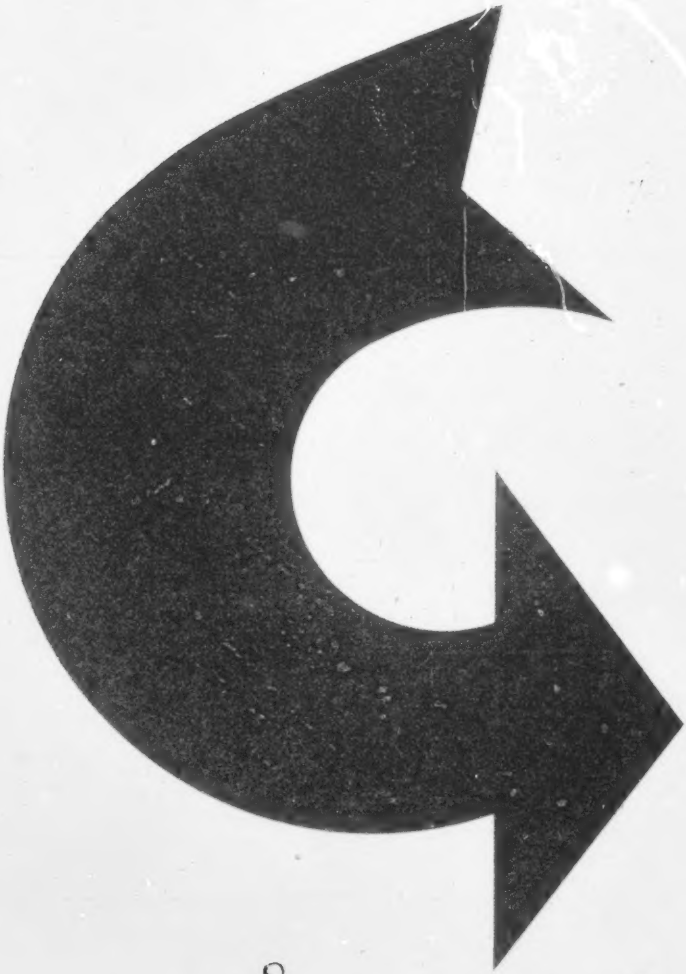
- Begin to realize that the world is constantly changing, for better or for worse, and how it changes will depend upon the values and actions of mankind.

- Understand that many times it is necessary to preserve things simply for their esthetic beauty, rather than allow that beauty to vanish in order for man to gain economically.

- Carry forth, as far as possible, the never-ending study of how and why all living things are bound up together in a countless, and often subtle, series of inter-relationships (ecology).

- Develop an attitude of hopefulness that the world can be made better through the improvement of our ecological climate; try to dispel the predictions of doom and attempt to "see through" the irresponsible attitudes and actions of some groups and individuals.

Adapted from the Objectives of a
Conservation Course of Study
DeWitt E. Hogle
Mountain View, California



Possible class activities are numerous, bound only by the scope of an individual teacher's imagination. Below are just a few which can be adapted and used in the appropriate grade level, K-12.

Write new environmental laws in junior and senior high school classes, which could be submitted to the state legislature. Students could do research and debate the merits of the proposed law in class. At lower grade levels, students might devise and implement regulations regarding the immediate school environment.

Stage a school-based environmental conservation fair. Involve the school and community in constructing exhibits, planning demonstrations, making posters, securing speakers, selecting films and preparing dramatic presentations concerning local environmental problems and their possible solutions.

Study an endangered species in class and prepare a full-scale advertising campaign (posters, radio and T.V. spot commercials, brief 8mm films, displays) which will acquaint the public with the situation and the steps they might take to lessen the danger.

Make a map of your locality. Have each student "X" the environmental problems he sees in the area on his copy. Then have the students, individually or in groups, choose one to further research. Encourage them to propose feasible solutions to the problem and then actively seek means of having their solutions implemented by community officials.

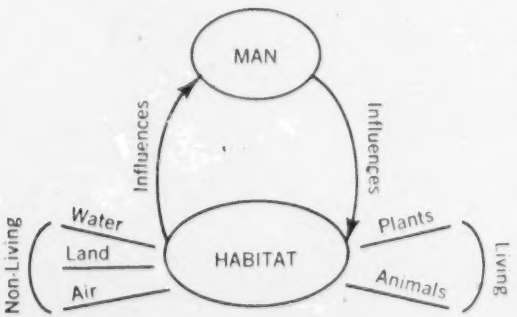
Set Up either a class or school bulletin board of "eco-pornography", which is described in **The Environmental Handbook** as those ads in which major industrial concerns loudly and cleverly claim to be solving some facet of the environmental crisis when actually they are misinterpreting the problem of merely clouding their guilt in rhetoric. Have students research and write up refutations of the ads for display with them. Urge them to write directly to the companies. Ask the company what it *really* intended to communicate; does it realize the impact it's having and that people care?

Conduct an environmental-conservation song writing contest in your school. Tape the winning songs and play them over the local p.a. system. Offer them to local radio and T.V. stations for broadcast.

Prepare a multi-media show highlighting a local environmental problem and suggesting possible solutions. Have students use some combination of the following: slides, on-the-spot cassette tapes, 8mm films, records, light shows. A suggested simple subject to begin: "The Two Faces of _____ School".

Publish a monthly class newsletter "Notes on the Environment", featuring an endangered animal of the month, an interesting project or experiment for the students to try, a crossword puzzle which includes ecological terms, local environmental news, vocabulary words, student drawings or cartoons, a listing of up-coming television programs and a listing of current environmental action programs in the area.

Organize an inter-disciplinary course (science, literature, social studies, composition) using the following concept model as a focus:



For example, Urbanization in San Francisco might be a focus, with each of the disciplines planning concurrent activities for students studying some facet of the concept.

Try a brief, conservation-oriented literature unit. Use the following two short stories:

"THE SNAKE" by Edwin Kraus, found in **Explication and Review B**, a sourcebook for teachers which accompanies **Counterpoint In Literature**, the 8th grade California State literature text. It was originally published by Scott, Foresman and Company, Glenview, Illinois 60025.

"THE LIFE AND DEATH OF A WESTERN GLADIATOR" by Charles G. Finney, found in **An Outlook Through Literature**, a 9th grade literature text published by Scott, Foresman and Company, Glenview, Illinois 60025.

and the poem:

"THE SNAKE" by D.H. Lawrence found in **Counterpoint In Literature**, described above.

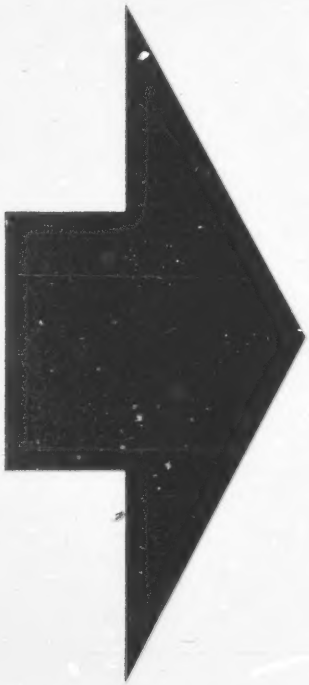
These stories and the poem should be read and discussed primarily for the differing attitudes toward nature which the various characters and authors express.

Make your school an environmental laboratory. Growing in popularity all over the country is the school-site or nearby ecological preserve. Below are listed some current materials which describe, in detail, ways of designing and using these areas:

The Community School Site, a laboratory for learning, was published by the U.S. Department of Agriculture, Soil Conservation Service, in March 1970. This booklet is about adapting school grounds to a teaching environment. The first part explains how to organize your plans and get started while the second part outlines possible activities for many different areas of the curriculum. Available from the U.S. Department of Agriculture, Soil Conservation Service, 2020 Milvia Street, Berkeley, California 94704.

Outdoor Education on YOUR School Grounds is an action approach to better teaching, a Manual for elementary and junior high school teachers by Norman F. Marsh. No jargon here, just 83 pages of activities and projects with clear plans and diagrams drawn when necessary. An excellent resource for teachers in all areas. Available free, one per school, from The Resources Agency, Office of Conservation Education, Sacramento, California 95814.

Conservation in Miniature, A Low Budget Environmental Program With a High Educational Return, was written by Ralph I. Turner. The procedures outlined in this book will enable a school district to reproduce completely an innovative, low-cost science conservation program. Also, individual teachers will find techniques, ideas and lesson plans structured on the "discovery" approach. Available free, one per school, from The Resources Agency, Office of Conservation Education, Sacramento, California 95814.



SELECTED FILMS FOR ENVIRONMENTAL EDUCATION

annotated by Dr. Bob O'Brien, San Diego State College

Films are a virtual necessity for effective environmental education. No conservationist ever becomes convinced of the necessity of preserving a landscape say, without experiencing it in some personal way. The printed word can sometimes be effective this way, but a feeling for nature and wildlife, an abhorrence of pollution and an appreciation of a scenic landscape can best be transmitted visually.

There are a wide range of conservation films available, but the purpose here is to offer the teacher a sampling of several types of films and to indicate the quality of films available in the field. **A Critical Index of Films and Filmstrips in Conservation**, Conservation Foundation, 30 East 40th St., N.Y. offers a film bibliography and a valuable rating of films by grade level.

ALL THE DIFFERENCE

C; 22m. Modern Talking Picture Service, 3 East 54th Street, New York, N.Y. 10022. (Free)

The dramatic contrast between beauty and pollution on the screen is paralleled on the sound track with poetry and a "1984" dialogue between a man and his wife. The film is a good introduction to the overall environmental problem.

ARK

C; 20m. Arthur Barr Productions, Inc., P.O. Box 7-C, Pasadena, California 91104. (Rental)

A film to motivate discussion and writing about ecology, conservation, and social problems. It dramatizes one man's attempt to maintain a pond community in a glass house which protects it from the polluted world outside. But rats, and finally men, violate and destroy his "Walden-under-glass."

THE BALD EAGLE

C; 33m. National Audubon Society, 1130 - 5th Avenue, New York, N.Y. 10028. (Rental)

This is a beautiful film, offering long, unhurried closeups of bald eagles hunting, resting and growing to maturity. It is a "soft" conservation film, designed to create interest in the eagle rather than dwell on the dangers which the bird faces. A knowledgeable teacher, tapping a ready-made concern in the survival of our national bird, can help describe the accidental shootings, habitat destruction and pesticides which imperil the bird.

C = color m = minutes

BOOMSVILLE
C; 11m. Learning Corporation of America, 711 5th Avenue, New York, N.Y. 10022. (Rental)

A brilliantly animated non-narrated overview of the growth of cities which shows what man has done to his environment from the explorer first spotting land to man reaching the moon.

CALIFORNIA—THREE IMAGES
C; 15m. American Institute of Architects—Northern California Chapter, 254 Sutter Street, San Francisco, California. (Free)

This slide presentation offers an effective contrast between wise and unwise use of the environment in California. A teacher can get ideas here, perhaps leading to a personal presentation using a similar technique. Nothing is as effective as a presentation which can draw on local familiarity with a subject.

THE EVERGLADES
C; 51m. NBC, 30 Rockefeller Plaza, New York, New York 10020.

The entire environmental crisis often seems to come to focus in a single area. The Everglades of southern Florida is one of the world's great homes for wildlife and man seems to be determined to try and destroy the area with everything in his power. Flood control and reclamation projects, a mammoth jetport, urban development, pesticides and poaching, all threaten this area, which might ultimately stand as a monument of man's ability to destroy . . . or to care.

FOLLOW THE WIND TO COUSIN (Sierra Club)
C; 20m. Association-Sterling Films, 866 34d Avenue, New York, N.Y. 10022. (Free)

Cousin, an island in the Indian Ocean set aside as a bird sanctuary, illustrates what nature is like when it exists in a pure state. This is a beautiful and poetic film which can be shown to all age groups.

FOR ALL TO ENJOY
C; National Park Service, 450 Golden Gate Avenue, Box 36063, San Francisco, California 94102. (Free)

A tongue-in-cheek presentation which can be a shocker for those not forewarned. The film illustrates the "parks are for people" concept carried to its ultimate absurdity, e.g., all the elk in the park are put into an enclosure for easy viewing.

C = color m = minutes

THE GREAT BARRIER REEF

C; 54m. NBC, 30 Rockefeller Plaza, New York, New York 10020. (Rental)

Here is an ecological film which is fascinating, instructive and beautiful. The devastation of the reef by coral eating starfish adds urgency to our search for knowledge on the interrelations of life.

MARSHLAND IS NOT WASTELAND

C; 14m. National Audubon Society, 1130 - 5th Avenue, New York, N.Y. 10028. (Rental)

That we consider one of Nature's most productive areas, the tidal marsh, as fit only for garbage dumps, industrial fill or subdivisions is a good indicator of how we managed to get into our present environmental mess. Who in the Conservation movement has not been involved, probably lately, in trying to protect some "worthless" lagoon or estuary or tidal flat from the bulldozer? This film does an excellent job of pointing out the value of marshes as food-producing areas and nursery grounds for mollusks and commercially important fish, for sea birds and migratory waterfowl, and for open space, beauty and passive recreation.

MINERS RIDGE

C; 22m. (Sierra Club). Association-Sterling Films, 866 - 3rd Avenue, New York, N.Y. 10022. (Free)

How much of our earth are we willing to destroy in order to obtain minerals and fuels? If an audience can watch this film on the Glacier Peak wilderness and accept the huge open pit copper mine in the midst of it, then we're on an irreversible path toward willing destruction. With continued strip mining, highway and subdivision cuts, open pit mining, filling and draining wetlands, the plundered earth will someday be a reality.

MULTIPLY AND SUBDUE

C; 8m. Pyramid Films, Box 1048, Santa Monica, California.

This three "movement" film edited to a Bach organ soundtrack is designed to encourage viewers to re-evaluate their attitudes toward man and nature. Part one visually traces the beginnings of the world in rich, natural color photography. The second movement re-examines the beauties of

C = color m = minutes

nature, weaving the original footage into a poetic visual experience using experimental color techniques. The final movement of the film examines the Biblical passage in which God commands Man to multiply over the earth and subdue it. This film is an excellent discussion starter as well as a poetic visual experience.

MULTIPLY AND SUBDUE THE EARTH
C; 60m. Indiana University, Audio-Visual Center, Bloomington, Indiana 47401. (Rental)

Is it possible for man to live with nature and not destroy it, to enjoy a good life and still leave the earth as vital and enriched as he found it? Ian McHarg thinks so and offers his ecology-based planning proposals as practical, sensible solutions. It is a film you wish every planning commission, city councilman and public official would see, and after viewing it yourself, maybe you will have incentive enough to see that the message will, with effort, get through to them.

THE NOISY LANDSCAPE
C; American Institute of Architects, Northern California Chapter, 254 Sutter Street, San Francisco, California (Free)

Unless man can create a happy, healthy environment in his cities, how can he expect to be able to appreciate and to protect the total environment? This film is focused on billboard and architectural control but has much wider implications.

NO ROOM FOR WILDERNESS
C; 26m. (Sierra Club). Association-Sterling Films, 866 - 3rd Avenue, New York, N.Y. 10022. (Free)

The sounds and sights of Africa are used effectively to make a strong statement concerning the balance of nature and the threat of overpopulation.

OUR VANISHED WILDERNESS: PRUDHOE BAY—OR BUST!
C; 30m. (NET). Indiana University Audio-Visual Center, Bloomington, Indiana 47401. (Free)

Different landscapes have varying capacities to absorb man's exploitation. The Arctic's capacity is very low, yet our eagerness to tap the Alaskan north slope oil deposits sets the stage for staggering environmental catastrophies.

C = color m = minutes

TROUBLED WATERS
C; 28m. U.S. Senate Public Works Committee, Washington, D.C. (Free)

This is a simple, straight-forward, well-narrated film about water pollution made at a stage when few truly recognized the immensity of the problem and fewer still were doing anything about it. **ILL WINDS ON A SUNNY DAY** is an air pollution film sponsored by the same committee.

WASTED WOODS
C; 15m. (Sierra Club). Association-Sterling Films, 866 - 3rd Avenue, New York, N.Y. 10022. (Free)

We seem unconvinced that there is anything more to forest conservation than reseeding and preventing forest fires. The forests of the U.S., many of them, are still being raped and even the agencies established to prevent such things are either unwilling or unable to take action. This is a film which completes the half-story told by forest products industries.

WILDERNESS RIVER TRAIL
C; 28m. (Sierra Club). Association-Sterling Films, 866 - 3rd Avenue, New York, N.Y. 10022. (Free)

One of the Sierra Club's oldest conservation films is also one of the most effective in showing the joy, the thrills and the meaning of contacts between nature and ourselves. The film was made in response to the Echo Park controversy of the mid 1950's.

CONSERVATION FOR BEGINNERS (Grades K-2)

Lifelike situations involving animals and children demonstrate the value of good conservation practices and the dangers of carelessness. The filmstrips introduce the basic concepts of forestry, land erosion and animal preservation.

1. **Sonny Squirrel and the Pine Trees**
2. **The Deer and the Haystack**
3. **A Picnic for Dick and His Friends**
4. **The Lamb and the Bluebells**
5. **Susan and the Forest Fire**
6. **The Muddy Raindrops**

Set of 6 captioned filmstrips, $27 from SVE, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614.

DISCOVERY STORIES (Grades K-3)

One of the world's leading writers and illustrators of children's books, Robert Sargent has created stories to motivate discussion of important topics with young learners. Set B contains two sound/color filmstrips:

Overcrowding in Hickyville. 8 minutes. Overcrowding and poor planning causes a strain on people and community resources.

Things Are Tough All Over. 8 minutes. Stresses the fact that pollution is everybody's problem and we can and should pitch in to stop the spread of it.

Both visuals and narration are highly original. Available for $30 from Urban Media Materials, Inc., P.O. Box 133, Flushing, New York 11361.

ENVIRONMENTAL POLLUTION (Grades 4-12)

A good introduction, with excellent pictures, to many current conservation problems.

1. **Nature of Crisis**
2. **Atmospheric Pollution**
3. **Land Pollution**
4. **Freshwater Pollution**
5. **Marine Pollution**
6. **Pollution Control**

A set of 6: no. 70W3800 for $40 from: Ward's Natural Science Establishment, P.O. Box 1749, Monterey, California or one set only available free, on loan from: Sierra Club, Angeles Chapter, Conservation Education Committee. Call (212) 780-1087.

CONSERVATION FOR TODAY'S AMERICA (Grades 5-9)

This up-to-date analysis of the importance of conservation of natural resources explains the causes of problems and some possible solutions:

1. Soil Conservation Today
2. Forest Conservation Today
3. Water Conservation Today
4. Wildlife Conservation Today
5. Urban Conservation Today
7. Land Conservation Today

Set of 7 filmstrips, 4 records and 7 teacher's guides for $49. Available from SVE, Inc., 1345 Diversey Parkway, Chicago, Illinois 60614.

ENVIRONMENTAL RESOURCES KIT (Grades 6-12)

This set is a real find—a complete conservation unit in itself! It explores the present state of water, air and land in this country. The set contains 3 filmstrips, "Water for Tomorrow", "Air for Tomorrow" and "Land for Tomorrow", records, transparencies and overlays, a student booklet and a comprehensive teacher's guide, including an up-to-date bibliography. Also included in the teacher's guide are plans for a culminating class game concerning a hypothetical water, air or land situation.

3 filmstrips, 3 records, 3 student booklets, 3 teacher's guides, K.D.I. Instructional Systems, Inc., Columbus, Ohio 43220.

NEW YORK CITY: AN ENVIRONMENTAL CASE STUDY (Grades 7-12)

This series is a collage of sights and sounds attempting to deal with the environmental crisis in human terms. It focuses on eight crisis areas in New York City where the problems are obvious. Various solutions are discussed and explored. However, the chief value of this series is that it can serve as a model for case studies of local areas. The teacher's guide is unusually good in that it offers many projects and methods to be implemented at the local level.

Set of 2 filmstrips, 2 records, and teacher's guide for $34. Available from Denoyer-Geppert, 5235 Ravenswood Avenue, Chicago, Illinois 60640.

THE CASE OF THE BIGHORN SHEEP: ECOLOGY AT WORK (Grades 7-12)

The Bighorn Sheep are gradually dying in the Idaho Mountains. A game biologist studies the decline of this endangered species. By following the steps of his study, students can come to an understanding of nature's complex interrelationships, and what happens when these are disrupted by man.

A set of 2 filmstrips and 2 records. Available from Warren Schloat Productions, Inc., Pleasantville, New York 10570.

ENVIRONMENTAL CRISIS: WHAT THE INDIVIDUAL CAN DO (Grades 7-12)

This student-made filmstrip and record gets right down to exactly what students can do *today* to alleviate the environmental crisis. A problem is explained and various actions are suggested; successful attempts to solve pollution problems in various parts of the country are shown. The tone is optimistic and encouraging; students will feel there *is* something they can do to better their world.

Set of 1 filmstrip, 1 record, teacher's guide and student leaflet for $15. Available from National Education Association, Publications-Sales Section, 1201 Sixteenth Street, N.W., Washington, D.C. 20036.

CLEARWATER: A DREAM FOR A RIVER (Grades 7-12)

Pete Seeger's dream of stemming the ruin of the Hudson River is chronicled by song and picture in this series. He and other dedicated people built a sloop, Clearwater, to carry their environmental message up and down the river. Their story is worth sharing not only for its own merit, but also because—more importantly—it represents a kind of event which can be repeated, with local variations, over the entire country. The excellent teacher's guide includes many suggestions for beginning projects in the student's own locale.

A set of 2 records, 2 filmstrips, and teacher's guide for $34. Available from Denoyer-Geppert, 5235 Ravenswood Avenue, Chicago, Illinois 60640.

MAN IN THE BIOSPHERE: AN INTRODUCTION TO HUMAN ECOLOGY (Grades 7-12)

Human ecology or the study of man's responses to his environment is discussed in this series of six filmstrips. What can this human animal do? What is to be his future? Will the green world yield to desert? Will it be submerged? Will the species destroy itself through even more resourceful warfare? Or will the end come through famine and pestilence brought on by sheer numbers of people clamoring for food, for space, for freedom from psychological ills?

The various facets of these questions are explored in these filmstrips:

1. **Man the Dominant Species**
2. **Man and Hunger**
3. **Man the Multiplier**
4. **Gregarious Man**
5. **Man the Originator**
6. **Man and Tomorrow**

Set of 6 filmstrips for $40 available from Ward's Natural Science Establishment, P.O. Box 1749, Monterey, California.

AGGRADATION-DEGRADATION (Grades 7-12)

Developed to help acquaint young people with the use and abuse of the natural environment of the U.S., this series should stimulate discussion of the pollution problem. It does not provide an answer but should lead to meaningful research by which students can discover the extent of our pollution problem. They should also discover what part the government, the private citizen and industry can play in correcting the problem.

1. **An Overview**
2. **Atlantic Coastal Plain**
3. **Appalachian Highland and Piedmont**
4. **The Great Central Plain**
5. **Mississippi River System**
6. **Rocky Mountain—Great Basin**
7. **The Pacific Coast**
8. **Interdependent People**
9. **Niagara: River with the Wandering Waterfall (Part I)**
10. **Niagara: Wandering Waterfall (Part II)**

Complete set of 10 color filmstrips with 5 Cassette Teach-A-Tapes and teacher's manual for $87.50 or: complete set of 10 filmstrips with 5 records and teacher's manual for $85 from Eye Gate House, Inc., 146-01 Archer Avenue, Jamaica, N.Y. 11435.

THE 1970's . . . DECADE OF CHALLENGE (Grades 7-12)

Oriented toward class discussion and seminars in social studies, these six filmstrips, accompanied by 3 records, perceptively explore some of the major dilemmas facing man in this decade. The areas included are:

1. **Ecology and Survival** assumes that youth is jaded with alarms and wants deeper understanding and answers.
2. **Cities: The Reality** shows how earlier generations got the city into trouble and indicates the changes needed.
3. **Cities: The Dream** dramatizes what planners see in our future if we but realize our potentials.
4. **Drugs: The Dream** recounts the background of drug use and historic disillusion with it.
5. **Drugs: The Reality** highlights, objectively, information on common drugs and their effects.
6. **Man: Values and Goals** reviews historic and modern concepts of man and focuses on goals that have survived regardless of years of despair.

Accompanying the set is a teacher's manual which includes the record scripts, discussion guides and a list of possible projects. Order from Filmstrip House, Inc., 432 Park Avenue, South, New York, N.Y. 10016

ECOLOGICAL IMBALANCE: SIX SYSTEMS DISTURBED (Grades 7-12)

This set investigates the despoliation and imbalance within the environment caused by both man and nature. Six basic ecosystems have been selected as focal points to study.

1. **Upland Forest**
2. **Lowland Forest**
3. **Marshes**
4. **Grasslands**
5. **Streams and Ponds**
6. **Tidal Zone**

Complete set of 6 captioned color filmstrips with teacher's manual for $35 from Eye Gate House Inc., 146-01 Archer Avenue, Jamaica, N.Y. 11435.

ENVIRONMENT: CHANGING MAN'S VALUES (Grades 8-12)

Students examine actions and proposals by public and private institutions for meeting current ecological crises. The series stresses that individual values and activities must be changed to improve the quality of life.

2 filmstrips, discussion guides and records for $35, or 2 filmstrips, discussion guides and cassettes for $39, from Pleasantville, New York 10570.

DO WE LIVE OR EXIST? (Grades 8-12)

This sound filmstrip was created by ten students from Woodlands High School in Hartsdale, New York. It consists of three distinctly different segments in which students have used original photography, music, poetry, and art to ask the question, "Do we live or exist?"

There is no simple way to describe "Do We Live or Exist?" It can best be used as an open-ended resource. Its purpose is to motivate, to stimulate awareness of individual feelings, and to elicit expression of these feelings. The photography and poetry deal with such themes as poverty, ecology, education, alienation, love and hate. As such, it is a series of statements describing how its creators feel about the world they live in.

Available for $20 from Guidance Associates, Pleasantville, New York 10570.

TOPICS IN ECOLOGY (Grades 8-12)

This excellent series gets at man's attitudes and value-priorities which have caused today's ecological disasters. The excellent, contemporary photography is realistic and the narration poses many questions for class discussions.

1. **What is Ecology?**
2. **What is Pollution?**
3. **What is Air Pollution?**
4. **The Automobile Beyond Air Pollution**
5. **Prosperity = Pollution**

5 filmstrips, 5 records, 5 short teacher's guides. $49.75 from Multi-Media Productions, Inc., 580 College Avenue, Palo Alto, California 94306.

MAN'S NATURAL ENVIRONMENT: CRISIS THROUGH ABUSE (Grades 9-12)

Students review the ugly and tragic death of Lake Erie, the Santa Barbara oil disaster and other current problems to document the potentially devastating impact of air, water and noise pollution on life in the United States. Comments from Glenn Seaborg, Chairman, A.E.C., Senator Gaylord Nelson, former Secretary of the Interior, Stewart Udall and scientist Barry Commoner.

Discussion guide, 2 filmstrips and 2 records for $35, or discussion guide, 2 filmstrips and 2 cassettes for $39, from Guidance Associates, Pleasantville, New York 10570.

PROBLEMS OF OUR CITIES (Grades 9-12)

This program of six sound filmstrips is designed to serve as motivation for studies in each of the areas presented. In each strip the subject is introduced, the problem presented and possible causes are suggested. Solutions are left to the exploration of teachers and students. The titles in the series include **Introduction, Housing, Pollution, Social Problems, Transportation Problems,** and **Urban Renewal**.

Available for $61.50 from Urban Media Materials, Inc., 68-06 Fresh Meadow Lane, Fresh Meadows, New York 11265.

ENVIRONMENT OF MAN (Grades 9-12)

Can man who created a brave new world, then turned upon himself to despoil it, rise to become the saviour of his own environment? This urgent question is explored in two major filmstrip sets of five filmstrips and three records each:

SET I ECOLOGY AND ENVIRONMENT
- **Is There Life on Earth**
- **The Ocean of Air**
- **Water—Clear and Otherwise**
- **Of Food and Land**
- **Energy Applied**

SET II MAN AND NATURE
- **Population—The Numbers Game**
- **Concrete Habitat**
- **The Busy-Body**
- **Unthinking Man**
- **Man: the Builder**

Each set of 5 sound/color filmstrips and 3 records is $59. AVI Associates, 825 Third Avenue, New York, N.Y. 10022.

THE WISDOM OF WILDNESS (Grades 9-12)

"In wildness I sense the miracle of life and beside it our scientific accomplishments fade to trivia" says Charles A. Lindbergh as he guides students through nature as he sees it. He describes the frontier woodlands his own father knew and his years as aviator and observer of virgin wilderness. With him, students consider the threat of technology to unspoiled lands and resources.

1 filmstrip, discussion guide and 1 record for $18, or 1 filmstrip, discussion guide and 1 cassette for $20, from Guidance Associates, Pleasantville, New York 10570.

MAN AND EARTH: THE POET'S VIEW (Grades 9-12)

A city man, used to squalor, noise and crowds, escapes to the country for six months. At first he isn't quite sure he likes the peace he finds, but slowly achieves a new way of seeing his world. This new way of perceiving stays with him when he returns to the city and he finds beauty of a different kind in his familiar surroundings.

Woven throughout his narrative of discovery are excellent readings of poems by such diverse poets as Shakespeare, Blake, Wordsworth, Ferlinghetti, Levertov, Stevens, and Whitman. The poems are accompanied by apt visuals and music.

This is a superb series for both exploring man's relationship to his environment and showing that poetry is an integral part of man's response to his world.

A set of 2 filmstrips, 2 records, and a teacher's guide. Available from Warren Schloat Productions, Inc., Pleasantville, New York 10570.

THE BEER CAN BY THE HIGHWAY (Grades 9-12)

Two aspects of American life strike almost everyone: its abundance and its wastefulness. This thoughtful presentation explores the psychology and economics of the throw-away culture and makes students aware of conspicuous waste . . . a pattern so ingrained in American life that it has lost its power to shock.

Available from Warren Schloat Productions, Inc., Pleasantville, New York 10570.

CITIES, U.S.A. (Grades 9-12)

National leaders discuss urban crises: air and water pollution, mental and physical health hazards, mass transit, crime, the flight of the middle class from the cities. Students trace the history of cities from earliest civilizations to the American megalopoli. They learn what is being done to solve urban problems and they examine programs that were designed to alleviate some of these problems. Awarded honors at the American Film Festival 1968.

Set of 1 filmstrip, discussion guide and record for $18. Available from Guidance Associates, Pleasantville, New York 10570.

MAN AND HIS ENVIRONMENT: IN HARMONY AND IN CONFLICT (Slide-Sound Show) (Grades 9-12)

Finally, an extraordinarily good environmental resource which can be used by humanities disciplines—art, English, social studies, sociology, and psychology. The slides of paintings and photographs trace man's relationship to his environment through the ages. The accompanying sound track eloquently fuses poetry and excerpts from philosophies. Together, the components of this program emphasize this central thesis:

> "Man's first environment, his mother's womb, is a natural place of security and comfort. But, at birth, he is thrust into a world of conflict which he must share with other animals. . . . A world where nature's harmony has been disrupted by man and if he wishes to restore it, he must create it for himself."

This program is unusually flexible. The teacher may manipulate the slides at will, following his own ideas or the inquiry suggestions in the teacher's guide. Students may use the slides and create their own tapes to fit a particular purpose. Program includes 160 slides in 2 carousel cartridges, 2 tape cassettes, 2 free LP records, and an excellent teacher's guide. Price is $120 from Humanities Inc., 70 Guernsey Street, Stamford, Connecticut 06901.

THE PEOPLE PROBLEM (Grades 9-12)

Part I of this series of two filmstrips discusses reasons for the population explosion and the food and housing shortages it creates. The scope of the malnutrition problems in countries like India, the threat to mental health posed by population compression in urban centers and the dangerous effects on world natural resources are also explained. Some feasible solutions to these problems are explored, with their pros and cons, in the second filmstrip. This series received honors at the American Film Festival 1969.

Set of 2 filmstrips, discussion guide and 2 records for $35. Available from Guidance Associates, Pleasantville, New York 10570.

TRANSPORTATION: WHERE DO WE GO FROM HERE? (Grades 9-12)

Students confront the magnitude of crises surrounding every major form of transportation in this country. They probe the roots of mass transit inefficiency and reasons for prolonged jam-ups over airports. Former Secretary of Transportation, Alan S. Boyd, tells what steps his department has already taken. Then he suggests legislative and other remedies for America's great transportation problems. Awarded honors at the American Film Festival 1968.

Set of 1 filmstrip, discussion guide and record for $18. Available from Guidance Associates, Pleasantville, New York 10570.

YOUNG SCIENTISTS INVESTIGATE POLLUTION (Grades 9-12)

This series of 4 sound filmstrips was developed from exhibits taking high honors in the environmental categories of the Chicago Science Fair. Two of the filmstrips deal with water pollution and two with atmospheric pollution. The series has a very positive value for science classes as students can follow the scientific method which the winning students used, and be encouraged to begin their own research in this vital field.

Set of 4 filmstrips, 2 records, and teacher's guide for $32.50. Available from S.V.E., 1345 Diversey Parkway, Chicago, Illinois 60614.

$18 ENVIRONMENTAL BOOKSHELF

This basic collection of books on the environment can be purchased for less than $18.

A SAND COUNTY ALMANAC

Aldo Leopold. Sierra Club/Ballantine Books. 95c

Aldo Leopold, one of this country's most famous natural historians, eloquently describes the joy and beauty found in a style of life that protects the environment. Included is his classic essay on the need for an ecological ethic.

THE USER'S GUIDE TO THE PROTECTION OF THE ENVIRONMENT

Paul Swatek. Ballantine Books. $1.25

Finally an *everyday* action book for environmentally conscious people. The author describes the decisions we can make which will improve or deteriorate our environment. Specifically, he describes products by brand names and discusses those which are ecologically safe. Besides its obvious usefulness in the home, it is also an appropriate resource for class discussions.

THE SUBVERSIVE SCIENCE

Paul Shepard and Daniel McKinley. Houghton Mifflin. $5.95

This is one of the most meaningful and diverse collections of environmental writings to date. Paul Shepard introduces it with a succinct and insightful essay on man's relationship to his environment. The book's latitude can be gauged by the main subject headings: "Man as Population," "The Environmental Encounter," "Men and Other Organisms," "Men in Ecosystems," "Ethos, Ecos, and Ethics".

THE POPULATION BOMB

Dr. Paul R. Ehrlich. Ballantine Books. 95c

The dominant problem in all our personal, national and international planning is overpopulation, according to Dr. Ehrlich. He clearly describes the dimensions of the crisis in all its aspects and provides a realistic evaluation of the options still remaining to us.

ON THE LOOSE

Terry and Renny Russell. Sierra Club/Ballantine Books. $3.95

In this unusual, highly personal book, Terry and Renny Russell share with the reader their insights gained while exploring the natural world—"the corners that were spared"—as Terry calls it. Brilliant photographs chronicle their journeys and, in addition to their text, are quotes from such writers as Joyce, Thoreau, Shaw and Leopold.

SILENT SPRING

Rachel Carson. Fawcett Crest. 95c

In this contemporary classic in ecological literature, Rachel Carson describes man's alarming and indiscriminate use of synthetic pesticides and their effect on water quality, soil, plants, birds, and fish. *Saturday Review* hailed it as "a devastating attack on human carelessness, greed and irresponsibility."

THE DESTRUCTION OF CALIFORNIA

Ray Dasmann. Macmillan. $1.50

The tragic story of a state bent on environmental suicide is graphically told and possible actions to avert the crisis are described.

CONSERVATION EDUCATION: A Selected Bibliography

Compiled by Joan Carvajal and Martha E. Munzer

An excellent annotated bibliography compiled for the Conservation Education Association. Order from The Interstate Printers and Publishers, Inc., Danville, Illinois.

MOMENT IN THE SUN

Robert Rienow and Leona Train. Sierra Club/Ballantine Books. 95c

Subtitled "A Report on the Deteriorating Quality of the American Environment," this angry report thoroughly documents man's accelerating destruction of his own habitat. Item by item, the Rienows present the ways in which we have ignored ecological principles and abused our environment under the pressures of overpopulation and a creed of exploitation. The last chapter, "Prolonging Our Moment in the Sun", offers a carefully considered suggestion for bringing us into equilibrium with our environment.

THE FRAIL OCEAN

Wesley Marx. Sierra Club/Ballantine Books. 95c

A fine companion volume to Rachel Carson's **Silent Spring**, this stunning, angry report will grow in importance with each new ocean disaster.

Who knows definitively how and where our values are shaped? Surely they are shaped by many forces—home, school, friends and experiences are some. Through books, many different value systems may be explored. The few books selected below present, implicitly or explicitly, the values of writers acutely aware of their environment. They are lovers of the natural world they live in. Read some of these books, and, best of all, share them with children by reading selected parts aloud.

GRADES K-3

ALL UPON A STONE

George and Jean Craighead. Illustrated by Don Bolognese. Thomas Y. Crowell Co.

A series of colorful close-up views of a single painting of a stone chronicle the adventures of a mole cricket as he travels to the top of an old, worn stone, searching for others of his kind. The book is an unusual celebration of a child-sized part of the natural world.

BLUE RIVER

Julian May. Illustrated by Robert Quackenbush. Holiday House.

Based on the history of a real stream, this book traces the story of Blue River from its Indian days to its present ugly, almost lifeless state. Finally the people of the town start trying to save the river. The unusual illustrations in predominately blue and green turn to polluted yellow when man mistreats the stream.

A CRACK IN THE PAVEMENT

Ruth Howard. Photographs by Arline Strong. Atheneum Press.

To read or read-to, this book simply and eloquently examines the urban environment. The author encourages children to "just watch things happening in the city" and points out places to find many things like "a tree growing on your street with bark like a giraffe's neck, or a small sandy mountain in a crack in the sidewalk." The photographs of city scenes and a class out exploring are a perfect supplement to the text.

THE DAY THEY PARACHUTED CATS ON BORNEO: A DRAMA OF ECOLOGY

Scenery by Jose Aruego. Young Scott Books.

This is a true story about the strange and unexpected effects of DDT on the island of Borneo. Written in delightful verse and illustrated as a play children can perform, the story vividly dramatizes what can happen to our environment when the consequences of our actions are not fully anticipated.

IF I BUILT A VILLAGE

Kazue Mizumura. Thomas Y. Crowell Co.

"If I built a village
Upon the hill
Along the river
In the woods,
There would be rabbits
Leaping in the sun,
Their white tails
A streak and a flash
Against the wind . . ."

So begins this simple, beautifully illustrated book which helps children become more aware of and affected by their environment.

NOAH'S ARK

Gail E. Haley. Atheneum.

All the animals in the world are saved from extinction when a modern Noah builds his fantastic ship. Brilliant illustrations help make this a fable for our times and perhaps for the future as well.

GRADES 4-8

THE MOUNTAIN

Peter Parnall. Doubleday and Company.

This is the story of a single mountain in the West, a mountain on which flowers and trees grow and where birds, deer, and many other animals live and find shelter. Along comes a group of people who love the mountain and want to keep it just the way it is. So, it is made a national park . . . and there the trouble starts. Trees are cut down, roads are built, campsites are established. And more and more people come to see the mountain. The irony of the book is gently underscored by Peter Parnall's colorful illustrations.

SPOILED TOMATOES

Bill Martin, Jr. Illustrated by Jay Ells. Bowmar, 622 Rodier Drive, Glendale, California 91201.

The brilliant, colorful illustrations of this little book pointedly carry the message that abuse of the national environment is not compatible with our human existence. The reader, while delighted by the zany illustrations, cannot help but learn of the interrelatedness of all things.

ANIMAL MOVERS: A COLLECTION OF ECOLOGICAL SURPRISES

The Natural History Press

Some of man's worst mistakes in relation to the natural world occurred when he took an animal out of its native environment and put it some place else. This book is a spirited account of the case of the North American grey squirrel which is now destroying trees in England, the deer in New Zealand, the rabbit in Australia and the piranha in the United States, among others.

BIRD OF THE FARALLONS

Harriett Mandelay Luger. Illustrated by Michael Hampshire. Young Scott Books.

This eloquent story recreates the life pattern of a California murre born on the Farallon Islands. His life goes on naturally until he encounters an oil spill and, unable to fly or swim, he is brought to shore. His rescue by a teen-age boy and the subsequent carefully detailed care subtly points out that the commitment to preserve life lies deep in the human heart.

WHO REALLY KILLED COCK ROBIN? AN ECOLOGICAL MYSTERY

Jean Craighead George. E.P. Dutton and Company

"Cock Robin lay on his back with his feet in the air. A red breast feather twisted in the wind, his clove-brown wings folded like a dancer's fan. It was seven minutes past 6 am on the twenty-fourth day of May. He was dead."

So begins an engrossing ecological mystery. In the environmentally-conscious town of Saddleboro, what inbalance had killed Cock Robin?

RASCAL: A MEMOIR OF A BETTER ERA

Sterling North. Dutton.

A young boy raises a raccoon and experiences the wonder of sharing life with one of the wild world's most entertaining creatures.

THE OTTER'S TALE
Gavin Maxwell. Dutton.
Maxwell repeats his famous **Ring of Bright Water** story for children by leaving out much of the description of Scotland's coast, but introducing the charms of a new otter, Teko.

OUT THERE
Adrien Stoutenburg. The Viking Press.
Sometime in the future, members of the Nature Squad leave the safety of their domed city to adventure into the long-dead Lost Lakes region of the Sierra Nevada. Slowly they rediscover plant and animal survivors from the past. This provocative story has a special application for all of us living in a threatened environment.

A SENSE OF WONDER
Rachel Carson. Harper Torch.
Rachel Carson's words and the unusually beautiful photographs of earth and sea and sky will help to keep alive a child's sense of wonder and that of the adult who shares the book with him.

AN EDGE OF THE FOREST
Agnes Smith. Viking.
The leopard lies down with the lamb in a quiet, gentle, almost philosophic story of nature in which man is the only intruder.

HIGH SCHOOL and ADULT

BEYOND YOUR DOORSTEP
Hal Borland. An Audubon/Ballantine Book.
"Since man will always be a minority member of the living community on this earth, he would be wise to know something about his co-inhabitants here," says Hal Borland in his book's foreword. And, subtitled "A Handbook to the Country", this book is a gentle, knowing introduction to these co-inhabitants and their natural world. The book is primarily about the countryside, not the wilderness, and is written for the layman rather than the specialist.

THE OUTERMOST HOUSE

Henry Beston. Ballantine Books.

Written over forty years ago as Henry Beston began a year in a small cabin on the shore of the Great Beach on Cape Cod, this book stands today as a classic description of a simple way of life attuned to the sea and the natural ebb and flow of a passing year.

THE PINE BARRENS

John McPhee. Drawings by James Graves. Ballantine Books.

The area of the southern New Jersey Pine Barrens is 650,000 acres, yet only a few thousand people live there and this is in the state with the highest population density in the nation! John McPhee explored this area and the book is a compassionate portrait of this land and its people.

THE WORLD OF NIGHT

Lorus J. Milne. Harper.

Although an unlighted world is alien to man, still much of the world's life goes about its business after the sun sets. This fascinating book explores this dark world and the inter-relationships among its inhabitants.

VOYAGES: SCENARIOS FOR A SHIP CALLED EARTH

Rob Sauer, editor. A Zero Population Growth/ballantine Book.

This excellent collection of sixteen thought-provoking science fiction short stories focuses on the ecological and environmental problems confronting the modern world. Such writers as Ray Bradbury, J.G. Ballard, Frederic Brown, Emilio S. Belaval, and Doris Lessing are included.

ISLANDIA

Austin Tappan Wright. New American Library.

Wright, in this massive, fascinating novel, has created an enviable imaginary culture—a culture whose people, history, government and literature reflect a deep respect and love for their land. When an American visits Islandia, a great contrast in attitudes and life styles is sharply apparent.

WATCHERS AT THE POND

Franklin Russell. Knopf.

The unexpectedly dramatic story of a year's cycle within the teeming universe of a pond.

THE IMMENSE JOURNEY

Loren Eisley. Vintage.

Naturalist-writer Eisley shares his reflections on our evolutionary journey through time. Pervading the book is his respect for all manner of living things—perhaps the most basic ecological ethic of all.

ALL THE LITTLE LIVE THINGS

Wallace Stegner. Signet.

This very contemporary novel explores a most important aspect of the ecological crisis—the clash of various personal values in respect to the environment. Set in a suburban area of California, Stegner's protagonists struggle to cope with the destructive elements in our society.

THE DESERT YEAR

Joseph Wood Krutch. Viking Compass Book.

While describing the subtleties of the seasons in the American Southwestern desert, Krutch also reveals his unique philosophy relating to the natural world.

THE WINTER BEACH

Charlton Ogburn. Morrow.

Poetically and simply, Ogburn relates the experiences of walking the beaches and exploring the marshes of New England, unbothered by the summer crowds.

EVERY DAY IS EARTH DAY

One of the **Stepping Into Science** series, this book uses familiar objects to lead a child's natural curiosity and active mind on an adventure with the basic scientific process skills. Colorful illustrations enhance the text.

The price is $3.38. Available from Children's Press, 1224 West Van Buren Street, Chicago, Illinois 60607.

CONSERVATION-FIRE PREVENTION PACKET

In California, 20-30% of all forest fires are caused by children. Alarmingly enough, studies indicate that the majority of these fires are caused by children under 10 years of age. The California Division of Forestry's objective in these units is to reduce the incidence of children-caused fires through an education process within the early elementary school programs. The program's specific purpose is to satisfy the child's curiosities about fire; to help the child understand and appreciate the cause and effect relationship of his actions; and to help the child understand fire's harmful effects to himself, others and his environment.

These units are completely visual and are well-suited to an inquiry approach. The packets contain teacher information, guidelines, student activities, and many visual aids on subjects of conservation and fire prevention.

Available at $6 each, plus tax, from the State of California, Department of Conservation, Division of Forestry, 1416 Ninth Street, Sacramento, California 95814..

PICTURES THAT TEACH

Fourteen 18½" x 23" display cards with full color photos on both sides. Four of these deal specifically with conservation and ecology. A teacher's manual provides questions and activities of progressing degrees of difficulty to be used with each photo.

The price is $24. All of the above are available from Silver Burdett Company, Palo Alto, California.

ACCLIMATIZATION
(A Sensory Approach to Ecological Involvement)

Planned for a nature camp situation, this awareness-centered approach to outdoor education could be profitably used by classroom teachers to help their students acclimate themselves to their own environment. In the words of the author, "Let's sensitize the individual to his environment. What do we care if he fails to remember the name of a wildflower? Does he remember its fragrance, the texture of its leaves—does he know where to find it, what lives in its community? And does he know, not because someone told him he should know, but because for him it is a thing of enjoyment and beauty?"

To foster this love-through-understanding, the booklet includes a series of planned sensory experiences and lesson plans for fieldwork. It also includes an excellent section on techniques for group control and a brief annotated bibliography.

Available for $2 from the American Camping Association, La Salle Street, Room 1122, Chicago, Illinois 60603.

SCIENCE—UNDERSTANDING YOUR ENVIRONMENT

This new elementary science series interrelates science, math and social studies to develop an overall understanding of the environment. It is heavily activity-oriented with over 600 pupil investigations. Air, water, noise and thermal pollution as well as litter, drugs, and proper treatment of resources are treated in depth. The teacher's guide is excellent. All lessons have stated concepts and behavioral objectives. In addition, the suggestions to the teacher are printed *clearly* in the margin of a full-size version of the student text. Vocabulary words, materials needed and science background for the teacher are also in the margin, right where they are needed.

The student text prices range from $2.73 to $3.72 and the teacher texts from $3.75 to $4.74. Available from Silver Burdett Co., Morristown, New Jersey.

SCHOLASTIC EARTH CORPS ENVIRONMENTAL/ ECOLOGY STUDY PROGRAM

This comprehensive, multi-media program is carefully planned to turn awareness into positive classroom and life attitudes. Its activities start children learning to put the "beautiful" back in America, while giving them a positive feeling about their environment.

The program consists of a sound filmstrip, and two kinds of units: environmental units for social studies emphasis; ecology/conservation units for science emphasis. Each unit is filled with meaningful, colorful, motivating materials which children can touch, see, read, sing, handle and use.

A. **Environmental Awareness** (for social studies)

Each unit contains the following:

1. Twenty-four 32 page booklets—the core of the unit. The titles are: "Look Around You" (Grades 1-3) or "First Follow Nature" (Grades 4-6).
2. 12 Environment Transparencies.
3. Double size poster (polluted vs. non-polluted America).
4. 20 black and white 11" x 14" photographs of contrasting scenes.
5. 7" LP recording of Pete Seeger singing five folksongs.
6. 24 individual song sheets—all the words on the record.
7. Buttons and certificates for the class.
8. Teaching Manual.

B. **Ecology/Conservation** (for science)

Each unit contains the following:

1. Twenty-four student booklets—the core of the unit. The titles are: "We Need Each Other (Grades 1-2), or "Earth As My Home" (Grades 3-4), or "Sharing the Earth" (Grades 5-6).
2. Nine Life-Zone Transparencies.
3. Giant Earth Cycles Wall Chart.
4. Buttons and Certificates for the Class.
5. Teaching Manual.

C. **Earth—Oasis in Space** (sound filmstrip)

This asks students to think of the Earth and the many gifts for life it provides us and other living things. By comparing our planet to a space ship of limited resources, the filmstrip points up how long and complicated was the development of Earth, and how fragile its life-support systems are. The filmstrip and record can be used in conjunction with either the Environment Awareness or the Ecology/Conservation Study Units.

The cost of each unit (A., B.) is $24 (additional student booklets are 75c each). The sound filmstrip (C.) is $17.85. All are available from Scholastic Book Services, Inc., 904 Sylvan Ave., Englewood Cliffs, N.J. 97632.

A PLACE TO LIVE

A 64-page workbook which covers basic ecological concepts, as found in any urban environment. It is designed to be self-motivating and is written simply enough (3rd grade level) to be read independently by most fourth or fifth graders. Woven into the text are "Try This!" activities (writing, drawing, or group activities or experiments) which sustain the children's interest and amplify the concepts introduced. The booklet also includes nine "Walks" related to the text and not requiring transportation. Many ideas for supplementary experiences are included in the Teacher's Manual.

Student texts are 75c each and the Teacher's Manual is $1.50, from Educational Services, National Audubon Society, 1130 Fifth Avenue, New York, N.Y. 10028.

ECOLOGY

Book A: **Nature & Needs**
B: **Habits & Habitats**
Problems & Programs

...es of 48-page booklets which provides stimulating and ...ght-provoking articles and activities to help students grasp ...ese fundamental ecological concepts: the diversity of life, the interrelationships of living and non-living things, the adaptation of organisms to environment and the process of change.

After reading about the concepts, students reinforce those concepts through meaningful science activities. In addition, follow-up activities allow individual students to progress on their own.

Available with teacher's guide for 35c each from American Education Publications, Education Center, Columbus, Ohio 43216.

ADVENTURES IN ENVIRONMENT
(National Environmental Education Development)

An interdisciplinary program developed by the National Park Foundation with the cooperation of the National Park Service. N.E.E.D. develops fine themes which are 1) variety and similaritles, 2) patterns, 3) interaction and interdependence, 4) continuity and change, and 5) adaption and evolution. Understanding and appreciation of man's total environment is developed in 21 lessons dealing with art, music, language arts, social science, math, and science. Each lesson provides explorations, problems and questions. It very successfully ties in environmental education with *all* elementary disciplines.

The price is $1.56 per book. Available from Silver Burdett Company, Palo Alto, California.

ADVENTURES IN ENVIRONMENT OUTDOOR BOOK

This pocket-size book contains ten outdoor activities to be used in identifying the five basic themes listed above. Various games and instructions on keeping a log are included for use in the outdoors. The price is 90c per book.

Teacher's Guide. To be used with *both* of the above. It contains specific suggestions for guiding students in outdoor and classroom activities. The price is 75c each. Available from Silver Burdett Company, Palo Alto, California.

NEED PICTURE PACKET
(National Environmental Education Development)

Twelve 18½" x 23" display cards with full-color dramatic photos on both sides. The teacher's manual provides questions and activities. Twenty-four units develop appreciation of natural beauty, the problem of annual preservation, understanding of various pollution problems, and the improper uses of resources. The price is $24 per set. Available from Silver Burdett Company, Palo Alto, California.

ENVIRONMENTAL STUDIES SERIES
Air Pollution, Water Pollution, Noise Pollution

This exciting new series is a stimulating supplement for science and social studies programs. It can do much to alleviate the fear, confusion, and misunderstanding which students feel about environmental pollution. Using the books as a guide, the student follows scientific processes to learn the basic science and social concepts underlying pollution. Each book introduces the problem, details relevant facts, and involves the student through investigation, experiments and personal enrichment activities.

Unlike conventional texts, these books are designed to supplement virtually any teaching style and student skill level. Using a modular structure, the four independent but parallel chapters within each book may be used alone, together with other chapters, or as a supplement to other text materials. They are quite adaptable to individual or group study.

Available from Addison-Wesley Publishing Company, 2725 Sand Hill Road, Menlo Park, California 94025.

OUR MAN-MADE ENVIRONMENT [redacted]

A most unusual and exciting text-workbook dealing with "that part of the world which we have made for ourselves—the places in which we live and learn and play. These places include our houses, schools, parks, streets, neighborhoods and cities." This book asks four basic questions: 1) "What is the Man-Made Environment?, 2) Why do we build the Man-Made Environment?, 3) What forces affect the shape of the Man-Made Environment?, 4) How can we change the Man-Made Environment?" Several different kinds of problems are proposed for students to work through, some by discussion and some by constructing various forms and buildings included on the tear-out pages which alternate with the text.

Single copies, $4.75 plus tax and shipping, from Joseph Fox, 1724 Sansom St., Philadelphia, Pa. 19103. Prices for multiple copies from GEE! Group for Environmental Education, 1214 Arch Street, Philadelphia, Pa. 19107. Telephone: (215) LO 4-4403.

ECOLOGY: MAN EXPLORES LIFE [redacted]

A study of ecology through case studies of scientists at work. As readers absorb ecological concepts, they also acquire an understanding of scientific problem-solving techniques in relation to their environment. Available at 35c each from American Education Publications, Education Center, Columbus, Ohio 43216.

YOU AND YOUR ENVIRONMENT (Parts I & II) [redacted]

These 32-page unit booklets present self-directed classroom and neighborhood activities which lead students to discover five vital concepts: the diversity of environments and the many kinds of life within them (including man); how specific organisms adapt to life in their environments; how all life forms interrelate; what the cycles and feedback are that drive the life machine; and the importance of change and adjustment to change.

Available for 40c each with teacher's guide from American Education Publications, Education Center, Columbus, Ohio 43216.

THE CONSERVATION STORY

This 48-page booklet examines the growing conflict between our need for conservation and the forces of technology. The students see our current natural resources in the light of history—from the first days of careless waste to today's mounting pressures. The book includes case studies of conservation battles, plus suggestions for students to explore community conservation problems.

Available for 40c each from American Education Publications, Education Center, Columbus, Ohio 43216.

OUR POLLUTED WORLD

This booklet helps students understand the social and scientific factors involved in air and water pollution, then shows how this knowledge can be applied to solving urgent pollution problems. It discusses air pollution control, oil pollution of the seas, and pollution by radioactivity. 35c each, available from American Education Publications, Education Center, Columbus, Ohio 43216.

IDEAS AND INVESTIGATIONS IN SCIENCE—Biology, 1971

Designed to reach terminal students who are slow learners or "educationally uninvolved," this new program makes science interesting and meaningful by relating scientific principles to the everyday world of the students. I.I.S. Biology is based on these five ideas: inquiry, evolution, genetics, homeostasis and ecology. Each idea is developed through a series of nine to twelve investigations. The five ideas provide a full year's course of biology.

Available from Prentice-Hall, Englewood Cliffs, N.J. 07632.

ENVIRONMENTAL SCIENCE
(Intermediate Science Curriculum Study)

Teachers familiar with previous I.S.C.S. programs should be alerted to the publication of this new volume. Chapters and activities in this individualized, self-pacing program deal with food values, biochemical oxygen demand, DDT, air, water, and thermal pollution, temperature inversions, litter, population growth, elimination of specific animals from the food web.

Price of the student text is $1.41, teacher text $1.92. Available from Silver Burdett Company, Palo Alto, California.

THE ENVIRONMENTAL CRISIS: WILL WE SURVIVE

The articles in this 119-page book present a number of divergent viewpoints, from a wide variety of different *kinds* of sources to illustrate that the same problem may be viewed from many different vantage points. No conclusions are drawn. Instead, a number of questions for discussion and reflection are posed at the end of each reading so that students can come to their own conclusions. The book also includes both activities to involve students further in the issues discussed and an excellent bibliography of books, reports, films and filmstrips.

The price is $1.60. Available from Prentice-Hall, Englewood Cliffs, New Jersey 07632.

ECOLOGY: MAN ON EARTH

This kit focuses on four literary works: Steinbeck's **The Grapes of Wrath**, Thoreau's **The Best of Walden**, Adamson's **Born Free** and Faulkner's "The Bear". A teacher's guide has commentaries on the books, plus presentation plans, discussion questions and activities. Accompanying the guide are three large posters dealing provocatively with ecological themes and a photo pack, "Man and Environment", twelve 8" x 10" photo reproductions showing the disastrous effects of environmental decay on human lives. Some of the photos show the eroded land and the people of the Dust Bowl era to accompany **The Grapes of Wrath.** Other photos of urban decay relate directly to the problem of people leaving the ravaged farmlands in search of a better life.

Kit available for $3.50 from Scholastic Book Services, 904 Sylvan Avenue, Englewood Cliffs, New Jersey 07632.

WHAT'S ECOLOGY?

A 51-page booklet by Robert Evans of Campolindo High School, Morgan, California. This is a well-illustrated, clear, survey introduction to the field, quite appropriate for science classes. Included is an up-to-date bibliography of books and magazines.

Individual copies are $1.50. Order from Hubbard Scientific Co., P.O. Box 105, Northbrook, Illinois 60062.

1 **ESSENCE (Grades 4-12)**

This new program defies adequate description. It is colorful, exciting and based on the soundest educational principles. By all means, send for an examination copy—the teacher's guide, unlike any other guide published today, is alone worth the effort. The price is $1 for a copy of **Essence**, and $10 for a complete teacher packet. Available from Environmental Studies, Box 1559, Boulder, Colorado 80302.

2 **AUDUBON AIDS IN NATURAL SCIENCE (Grades K-12)**

A free pamphlet listing a variety of booklets, programs, charts, bulletins, etc. which are available, at low cost, from the Audubon Society. Write Educational Services, National Audubon Society, 1130 Fifth Avenue, New York, N.Y. 10028.

3 **PEOPLE AND THEIR ENVIRONMENT**

A new series of teaching guides to Conservation Education for elementary, junior and senior high schools, edited by Matthew J. Brennan (Director of the Pinchot Institute for Conservation Studies). Each guide includes between 43 and 80 individual lessons, lists of instructional materials (films, pamphlets, charts, filmstrips, records) and where to find them. A complete bibliography for teachers is also included. The individual guides are: Grades 1-3; Grades 4-6; Grades 7-9; Grades 10-12 (Social Studies); Grades 9-12 (Home Economics); All Grades (Outdoor Classroom & Camping).

The guides are $3.95 each. For three or more volumes, $3.50 each, from J.G. Ferguson Publishing Company, 6 North Michigan Avenue, Chicago, Illinois 60602.

4 **CONSERVATION NEWS**

This 15-20 page, twice monthly newsletter, is printed to fit in a looseleaf binder. As teacher resources, the articles are both political and ecological, very well-written and up-to-date. Occasionally, transparency-master cartoons are included. It is printed as an educational service of the National Wildlife Federation, 1412 Sixteenth St., N.W., Washington, D.C. 20036. Single copy subscriptions are free.

5 **"EQ" MULTI-MEDIA TEACHER'S KIT (Grades 7-12)**

A more extended classroom unit, this kit contains a filmstrip; a printed narration and record to accompany the visual aids; "To Save the Earth," a teacher's pamphlet outlining a program of direct student and community action; 25 copies of the comprehensive 16-page "EQ Index" reprint; plus a 16-page reference and bibliography giving source and background materials. Available for $10 from the National Wildlife Federation, 1412 Sixteenth St., N.W., Washington, D.C. 20036.

6 **THE INSTITUTE FOR ENVIRONMENTAL EDUCATION**

This recently incorporated, national non-profit organization plans teacher training institutes and develops process curriculum. The published Curriculum Guide (which offers very detailed experiments concerning water pollution) and information about services offered school systems, is available from Mr. Joseph H. Chadbourne, President, Institute for Environmental Education, 2803 Scarborough Road, Cleveland Heights, Ohio 44118.

7 **AMERICA IS IN TROUBLE**
1970 E.Q. (Environmental Quality) Index.

This brilliantly colored and illustrated pamphlet published by the National Wildlife Federation, is a report card for the American environment in 1970. The very clear charts, graphs, and illustrations show students where we stand now in regard to our air, water, wildlife, timber, soil, minerals and living space. Very succinct suggestions for improving all areas included. Single copy free; 10-29 copies, 15c; 30-99 copies, 12c; 100-499 copies, 11c; from National Wildlife Federation, 1412 - 16th St., N.W., Washington, D.C. 20036.

8 **IMPROVE YOUR ENVIRONMENT—FIGHT POLLUTION WITH PICTURES (a Kodak Customer Service Pamphlet)**

This beautifully illustrated, 56-page, "how-to-do-it" booklet would be an asset to any project-oriented classroom. It includes excellent examples of photographic anti-pollution campaigns and contains explicit instructions for the use of simple cameras. It can be ordered from Eastman Kodak Company, 343 State Street, Rochester, New York 14650. Prices: $1 single copy; 2-9 copies @ 75c each; 10 or more copies @ 50c each.

9 PROCESSES FOR A QUALITY ENVIRONMENT

(A Report of the National Conference on Environmental Education, December 1970). Edited by Robert S. Cook and George T. O'Hearn.

In his forward to this collection of papers, S.P. Marland Jr., U.S. Commissioner of Education said "Environmental education is directed toward attitudes, and, therefore, the emphasis is on process and not on content . . . new attitudes of environmental concern must pervade each subject, each course, and each discipline, whether mathematics, English, science, social studies or music. Environmental education must be interdisciplinary, pervading the spirit of all teaching at all levels."

The papers in this book outline a comprehensive framework for concept and value-based environmental education in America. Specific subject fields are discussed and numerous plans and activities are presented. It is an invaluable aid to teachers at all levels. Available at $2.50 each, from the Office of Community Outreach, The University of Wisconsin-Green Bay, Green Bay, Wisconsin 54302.

10 ZERO POPULATION GROWTH PRICE LIST

This list includes descriptions of buttons, bumper stickers, pamphlets, tapes, books, posters, commercials, ads, slides and films. Available for purchase (singly or in large lots) from Zero Population Growth. The list and order form is available from Zero Population Growth, 267 State Street, Los Altos, California 94022.

11 LIFE EDUCATIONAL REPRINTS

How many times have you guiltily torn an intriguing article out of *Life* while sitting in a dentist's office or a laundromat? You no longer need to, as *Life* offers an inexpensive reprint service for their major articles in many fields. They offer the following full-color articles on the environment:

No. 93 Threatened America: Fight Over the Wilderness
No. 89 Vanishing Wildlife: The Mammals
No. 90 Vanishing Wildlife: The Birds
No. 76 Water Pollution: The Blighted Great Lakes
No. 69 Air Pollution
No. 92 Cars & Cities on a Collision Course
No. 91 Environment: What Can Be Done?

Reprints may be ordered from Life Education Program, Box 834, Radio City Station, New York, N.Y. 10019. Prices: First 20 copies 75c each; 21-299 copies 25c each.

12 CONSERVATION DIRECTORY 1971

A comprehensive listing of organizations, agencies, and officials concerned with natural resource use and management. Included sections are U.S. Government; international, national, regional, and interstate organizations and commissions; government agencies and citizens' groups in states, territories and Canada. 140 pages. Available for $1.50 from The National Wildlife Federation, 1412 - 16th Street, N.W., Washington, D.C. 20036.

13 BIG ROCK CANDY MOUNTAIN (Winter 1970)

A most unusual teaching catalogue published by The Portola Institute, Inc., 1115 Merrill Street, Menlo Park, California 94025. Single copies, $4; 6 issues per year $8. "The **Big Rock Candy Mountain** seeks to aid in the acquisition of this knowledge: not by molding the learner into a pre-established pattern, but by providing resources to help him quench his thirst; not by teaching meaningless stockpiling leading to a dissatisfied life, but by encouraging growth in the present leading toward a joyous old age; not by changing people, but by awakening a desire to change. This is our motivation for doing this catalogue."

Page 32: The Wilderness School and The Outward Bound Program
Page 33: Environmental Education films and filmstrips
Page 34: Farallones Designs/Institute
Page 35: Our Man-Made Environment

plus 92 other pages of unusual education materials for all ages.

14 HOW TO TEACH WILDERNESS CONSERVATION

Edited by Thelma Carder. Conservation Education Committee, San Francisco Bay Chapter, Sierra Club, 1965.

This succinct 32-page booklet explores eight topics, such as "How is wilderness essential to our national well-being?", "What is ecology and how is it important to us," and "How are our national parks and public lands threatened?" The discussion of each topic includes the concepts involved, suggested activities, and sources of additional materials. Available from Sierra Club, 1050 Mills Tower, San Francisco, California 94104.

15 IT'S YOUR WORLD (Grades 2-5)

A basic ecology guide and project book, written and illustrated by Claudia Chargin. Using the format of a coloring book with hand printed text, the message comes through clearly that we all have a responsibility not only to familiarize ourselves with the fundamentals of ecological living, but also with methods by which we can improve our habitat. Suggestions include writing letters to government and industry, organizing community programs, learning about ecology in school, walking instead of driving, composting and gardening, shopping with care and recycling.

The book is designed to encourage young readers toward action. It explains how to conduct several simple biological experiments and includes pages to be cut out and transformed into paper planes, ecology badges, and pelican profiles. Available for $7.50 per *dozen* from Troubadour Press, San Francisco, California.

16 TEACHING FOR SURVIVAL

A Handbook for Environmental Education

Mark Terry. A Friends of the Earth/Ballantine Book. $1.25

Mark Terry begins with the classroom and explains succinctly how and why we should transform our present educational system so that it can become a model environment for the rest of society. He outlines practical conservation procedures to be implemented at school level and discusses the values which may be taught in all areas of the curriculum.

17 ECOLOGY AT HOME

(how your housekeeping habits can help save our environment)

Edited by Jacqueline Killeen, illustrated by W. Busser Howell, with an introduction by Clifford C. Humphrey. Dedicated to Planet Earth, this practical book poses alternative procedures we can use at home to conserve resources and reduce pollution. Sections are included on gardens, cooking, transportation, cleaning, garbage, uses of electricity, pets and clothing. Available for $1.95 from Ecology Action Educational Institute, Modesto, California.

18 WOLLENSAK TEACHING TAPES

The well-packaged tape kits listed below are excellent supplements to programs in environmental/ecological education. Because each boxed kit contains both a cassette, or reel, and student response worksheets, it can be used with a whole class or by a student working independently. The kit also contains a teacher's guide listing objectives and appropriate grade levels, a summary of taped materials, and a list of extra materials needed and follow-up suggestions.

Food Chains, Pyramids and Web (Grades 5-9)
The fundamentals of ecological balance and survival are introduced through an understanding of food chains, energy and numbers pyramids and their interaction in creating the food web.

Understanding Water Pollution (Grades 5-12)
Both the sources of water pollution—commercial, municipal and personal—and types of water pollution are discussed, with primary, secondary and tertiary waste treatment explained and illustrated.

Stopping Water Pollution (Grades 8-12)
Anti-pollution legislation is summarized, and water uses, criterial implementation and enforcement plans are discussed. Emphasis is on group and individual responsibility and action.

Understanding Air Pollution (Grades 5-12)
Pollution is defined and an inversion is illustrated. Common pollutants, their sources, danger levels and health hazards are listed and discussed.

Stopping Air Pollution (Grades 8-12)
As the underlying cause of air pollution is understood to be our rate of consumption and life style, this tape stresses individual and group responsibility and possible action patterns to follow.

The Pesticide Problem (Grades 7-12)
The effects of pesticides, both positive and negative, are discussed and illustrated in a worksheet food chain diagram. The various pesticide classifications are explained and practices for safe use are stressed.

The Population Problem (Grades 8-12)
The mounting population problem and its effect as an intensifier of other social concerns is presented to the stu-

dent in forceful statistics. Various potential solutions are explored.

Price $7.95 per kit. Further information from 3M Company, 3M Center, St. Paul, Minnesota 55101.

19 ENVIRONMENTAL EDUCATION FOR EVERYONE

A bibliography of curriculum materials for environmental studies. 38 pages, compiled by Ellie Snyder for the National Science Teachers Association. 1930. Available from National Education Association, Washington, D.C. for 75c per copy.

20 HANDBOOK

Written and compiled by Ronald Eber for the Sierra Club Campus-Community Action Program.

The preface to this handbook for high school and college ecology action groups states its purpose as "aiding concerned individuals and ecology groups to better define their goals, initiate good programs and undertake effective action." And this 55-page booklet does exactly that—succinctly and informatively. It is a must for teachers or students who are beginning new groups and would be a helpful source for group action already in progress. Available for 50c each from The Campus-Community Action Program, Sierra Club, Mills Tower, San Francisco, California 94104.

This field, our most up-to-date resource, is shared by the stalwarts who have been publishing for years *and the new, crisis-oriented* fledglings who are struggling for survival. Below is a selection of both types. (Those with an asterisk are for students).

I WEEKLY PERIODICALS

1. **National News Report** ($12/yr.)
   Sierra Club
   1050 Mills Tower, San Francisco, Calif. 94104

2. **CF Letter** ($6/yr.)
   The Conservation Foundation
   1250 Connecticut Ave., N.W., Washington, D.C. 20036

3. **Environmental Action Bulletin** ($10/yr.)
   Rodale Press, Inc.
   Emmaus, Pa. 18049

4. **Conservation Report**
   National Wildlife Federation
   1412 - 16th St., N.W., Washington, D.C. 20036

*5. **My Weekly Reader** and **Senior Weekly Reader**
   (60c per pupil per school year for 10 or more copies;
   $1.20 per for less than 10)
   American Education Publications
   Education Center, Columbus, Ohio 43216

II PERIODICALS BY MEMBERSHIP

1. **Sierra Club Bulletin**
   (Annual dues are $17 first year, $12 thereafter,
   of which $3 is for the Bulletin.)
   Sierra Club
   1050 Mills Tower, San Francisco, Calif. 94104

2. **Natural History** ($7/yr.)
   The American Museum of Natural History
   Central Park West, at 79th St., New York, N.Y. 10024

*3. **Ranger Rick's Nature Magazine** ($6/yr.)
The National Wildlife Federation
1412 Sixteenth St., N.W., Washington, D.C. 20036

4. **Cry California** ($9/yr.)
California Tomorrow
Monadnock Building, 681 Market St., San Francisco, Calif. 94105

5. **National Wildlife**
The National Wildlife Federation
1412 Sixteenth St., N.W., Washington, D.C. 20036

6. **Audubon** ($10/yr./individual; $12.50/yr./family)
National Audubon Society
1130 Fifth Avenue, New York, N.Y. 10026

III PERIODICALS BY SUBSCRIPTION

1. **Not Man Apart** ($5/yr.)
Friends of the Earth/Not Man Apart
8016 G Zuni Road, Albuquerque, N.M. 87108

2. **Environment** ($8.50/yr.)
438 North Skinker Blvd., St. Louis, Mo. 63130

*3. **The Curious Naturalist** ($2/yr.)
Massachusetts Audubon Society
Lincoln, Mass. 01773

*4. **Science News** ($7.50/yr.)
231 West Center Street, Marion, Ohio 43302

5. **Zero Population Growth National Reporter**
($5.50/yr. – members receive this automatically)
Zero Population Growth, Inc.
330 Second Street, Los Altos, California 94022

6. **Clear Creek** ($5/yr.)
617 Mission Street, San Francisco, Calif. 94105

A most entertaining and pervasive medium for reaching people of all ages is music, broadcast around the clock and listened to widely by young people. And when the song lyrics deal tellingly with our environmental crisis, there is a huge audience to be reached. Increasingly today, singers and folk/rock groups are singing of our environmental dilemma and our students are listening. Records on these topics should be heard and discussed often in the classroom both for the values they are espousing and for the metaphorical implications in their lyrics.

SURVIVAL SONGBOOK

Collected by Jim Morse and Nancy Mathews

Taping songs of topical interest sung and played by students is an excellent class activity. As Pete Seeger says in his introduction to this contemporary collection of 59 songs:

"Songs won't save our planet.
But then, neither will books or speeches.
How will it be saved?
By changing our course of action.
How will our present course be changed?
When our heads are turned around?
How do our heads get turned around?
By seeing more clearly:
Where we are going,
Where we have come from,
Where we are right now.

In this volume are calypso-type melodies,
blues, laments, satires,
They have been made up by songwriters
using the only tools they have
to try and turn people's heads around."

The song lyrics and music are accompanied by haunting illustrations by Jos A. Smith. The book also includes the numbers of the albums on which each song is recorded.

Available from Sierra Club Books, 1050 Mills Tower, San Francisco, California 94104 for $4.95.

The growing field of simulation games offers several in the field of ecology or environmental control. Because many of these incorporate role-playing techniques in decision-making situations, they directly involve the student, provide him with up-to-date information and make him responsible, in the game's context, for his actions. When the game's premises and information have been checked for accuracy, what better all-around learning tool do we have available to us?

1 MAN IN HIS ENVIRONMENT (Grades 4-6)

This game-kit was developed as a public service by Coca-Cola. An Ecology Kit contains a teacher's guide which includes a short glossary of current terms and guidelines plus materials for the two exercises below:

- **Rescue in Space** is designed to help children understand the principle that because the resources of the planet Earth are limited, we must learn to use our resources wisely and to reuse them where possible.
- **Make Your Own World** is designed to help children understand that all elements of the environment are interrelated and interdependent. When man changes the environment, it has consequences not only for himself, but for other forms of plant and animal life, and for the soil, air and water.

The kit, games included, is available free to educators by calling or writing the local Coca-Cola Bottling Company.

2 SMOG and DIRTY WATER

Two games from Urban Systems in which each participant is a pollution control officer for his city and must deal with ever-changing factors in regard to the environment. Available at $10 each from Urban Systems, Inc., 1033 Massachusetts Avenue, Cambridge, Mass. 02138.

3 ECOLOGY KITS (Grades 7-12)

These game kits cover many different ecological areas.

- **Why Are Leaves Green** is about the unique ability of plants to use light to make their own food.

  Life in the Water is about the tiny aquatic plants and animals that form the basis of all life in the water.
- **Predator Prey** is about population growth and decline. It focuses on competitive predator-prey relationships in an ecosystem.
- **What Moves Life** concerns the dependence of every organism on the physical factors in its environment.
- **Life from Death** explores the recycling of energy whereby dead plants and animals become the building blocks for even the most advanced living organisms.
- **Can I Drink the Water?** Does that bubbling stream carry mountain-fresh water, or enough pounds-per-part of pollutants to gum up your insides for good? With this kit, you can learn the difference between pure water and foul. The kit includes instruction booklet, clay and vial, distilled water, agar PH paper, PH color chart and all the equipment you need to find out what else is coming out of the tap besides H_2O.
- **Can I Breathe the Air?** This is a fair question these days! What you don't know *can* hurt you. With this kit, you can discover the air's pollution level, compare the air in a residential area to the air near a factory. The kit includes a detector card, calcium hydroxide instructions, eye dropper, and charts.

Available at $6 each from Urban Systems, Inc., 1033 Massachusetts Avenue, Cambridge, Massachusetts 02138.

4 FROM THE NATIONAL WILDLIFE FEDERATION

- **Ranger Rick's Forest Fire Game (Grades 1-5)**
  This suspense-filled game for two to four players includes a large playing board and a soft cover copy of the book "Ranger Rick and the Great Forest Fire." Available for $4.95 from the National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036.
- **Wildlife Lotto (Grades 1-5)**
  54 different subjects are reproduced in six-color printing, designed for two to six players. Available for $2 from the National Wildlife Federation at the above address.

- **Songbird Dominoes (Grades 1-5)**
  The old favorite game with a new look. Colorful songbirds are mounted on heavy board stock for easy handling and long life. The instructions are included. Available for $1.75 from the National Wildlife Federation at the above address.

5 ENVIRONMENTAL SIMULATION GAMES

Expository prose at its best can only suggest the dynamic, complex nature of public issues. But through role-playing, students can actually participate in them. An important bonus is that students also learn how to bargain, compromise, and negotiate to resolve problems.

- **The Redwood Controversy (Grades 7-12)**
  Land use problems have conflicting ecological, sociological and political components. **The Redwood Controversy** is a role-playing game designed to help students understand the issues involved in environmental planning. Students play the roles of Senators and Senate witnesses, businessmen and scientists, in a simulation of the events that preceded the Senate vote on the Redwood National Park.

  It is not enough to be knowledgeable in science alone. To use his knowledge of science and ecology, a person has to be socially aware and effective. He has to know how decision-making processes work and how to influence them. **The Redwood Controversy** attempts to teach these things. Available for $10 (enough materials for a class of 20-30) from Houghton Mifflin, 777 California Avenue, Palo Alto, California 94304.
- **The Planet Management Game (Grades 7-14)**
  Students deal with such contemporary ecological problems as the population explosion, famine, and the environmental crisis when they become managers of an imaginary, earth-like planet named Clarion. Clarion's five-year budget must be divided among various improvement projects, such as agricultural research, highway construction, educational television, etc. A "cardboard computer" consisting of die-cut cards shows the players how their decisions affect the planet's food supply, average income, environmental quality and population. Each game is played by a management team. Five is an ideal number, but from 2 players to a dozen could play. Available from $16 from Houghton Mifflin. (See address above.)

ORGANIZATIONS

Organizations are often used gratefully by teachers simply as dispensers of materials and information. The present situation in environmental education demands more from teachers now. They must commit themselves—their energies and time—to the organizations which are fighting to preserve our tenuous hold on this planet. Though increased teacher involvement in the work of conservation organizations will come more and better environmental educational programs.

Below are a very few organizations selected from a vast field. If the names of all the active conservation organizations from "Save the Sea Otter" to the "Committee for Green Foothills" were to be included, this slight booklet would grow beyond reasonable proportions. However, included also are resource booklets in which you can obtain information about governmental organizations and those in your area.

Friends of the Earth
30 East 42nd Street
New York, N.Y. 10017

Sierra Club
220 Bush Street
San Francisco, Calif. 94104

National Audubon Society
1130 Fifth Avenue
New York, N.Y. 10028

Wilderness Society
725 - 15th Street, N.W.
Washington D.C. 20005

National Wildlife Federation
1412 - 16th Street, N.W.
Washington, D.C. 20036

Zero Population Growth
367 State Street
Los Altos, Calif. 94022

Nature Conservancy
1522 K Street, N.W.
Washington, D.C. 20005

Ecology Begins at Home, A Household Environmental Handbook
Ecology Action
San Fernando Valley State College
9520 Etiwanda Avenue
Northridge, California 91324

Ecology Center
2179 Allston Way
Berkeley, California 94704

Conservation and Environmental Organizations
Sierra Club
1050 Mills Tower
220 Bush Street
San Francisco, Calif. 94104

General Guidelines for Environmental Involvement
Angeles Chapter, Sierra Club
427 W. Fifth St.
Los Angeles, Calif. 90013

Conservation Education Resource Directory
Conservation Education Office
Department of Education
721 Capitol Mall
Sacramento, Calif. 95814

Commitment

DO YOU collect your papers for recycling?

DO YOU use returnable bottles only?

DO YOU use or buy plastics and wax-coated containers as little as possible, knowing that presently they are not recycled?

DO YOU, if you use aluminium, always feel obligated to recycle it?

DO YOU buy and use bio-degradable soaps rather than detergents?

DO YOU use electrical power as a luxury, not as a necessity?

DO YOU support a conservation organization with either your time or your money?

DO YOU ever litter?

DO YOU regularly express your views to and seek information from your congressmen on environmental issues?

3rd Edition. Revised 1973.
This entire issue is printed on 100% recycled paper.

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